

Using WebCT, Wiki Spaces, and ePortfolios for Teaching and Building Information Literacy Skills

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ABSTRACT. Librarians, as service providers, are always looking for innovative ways of using technology for designing and improving information systems that allow teaching and building of information literacy skills. Online learning and teaching tools offer teacher librarians undreamed of opportunities to enhance face-to-face information literacy instruction. This paper describes the librarian's research, discoveries, and experience with using WebCT Campus Edition and Vista, ePortfolios, and Wikis to deliver online information literacy instruction as part of fully-online, Web-enhanced, or hybrid courses. Models of librarian/faculty partnership and collaboration are also illustrated.

KEYWORDS. Online information literacy instruction, WebCT Campus Edition, Wiki Spaces, ePortfolios, library instruction, online learning

THE BEGINNING

Southern Connecticut State University's School of Information and Library Science started offering online courses at the end of the 1990s. The course management system the university was using was WebCT Campus Edition (CE). Graduate students and future librarians had the opportunity to be a part of and experience the online learning process

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at the student's end. WebCT allows students to share discussion ideas, and, by providing a shared file space, it supports online collaboration, learning communities, and knowledge building. The ease and convenience of WebCT's tools and features helped students efficiently manipulate large amounts of information; effectively deal with the complexity of graduate studies tasks, assignments, and projects; and also collaborate and learn from their peers. This experience uncovered for future librarians the learning possibilities and unique teaching opportunities that WebCT offers for information literacy instruction.

USING WEBCT FOR INFORMATION LITERACY INSTRUCTION

WebCT/CE: Course Menu Component With Web Link to Library Resources

The reference/instruction librarian at Three Rivers Community College (TRCC) was thrilled by the opportunity to use WebCT/CE for information literacy instruction. Together with a dedicated and enthusiastic group of nursing faculty, the librarian collaborated at creating and implementing a Nursing Information Literacy Program for the Associate Degree in Nursing Program, which prepared students to enter the profession as registered nurses. The project was built on the systematic design of instruction model, which consists of a "set of interrelated parts, all of which work together toward a defined goal" (Dick, Carey, & Carey, 2005, p. 1). Focusing on student learning outcomes, nursing faculty and the librarian conducted a front-end analysis of the nursing program in order to identify instructional goals "congruent with learner characteristics, learning and performance contexts and tools available" (Dick et al., p. 14). After identifying instructional goals, the planning continued with conducting instructional analysis and analyzing learners and contexts in order to write performance objectives. At that point in the process, assessment instruments were developed that were paired with an instructional strategy and instructional materials. After the instruction took place, formative evaluation of instruction was designed and conducted. The last steps taken, based on the findings, were revising instruction and designing and conducting summative evaluation.

The Nursing Information Literacy Program had three components. The first component, the Nursing Information Competencies, founded on the

Association of College and Research Libraries (ACRL) Information Literacy Standards for Higher Education (2004), were designed progressively for each level of instruction covering the two years of study. Based on the information competencies, the Information Literacy Activities consisted of face-to-face physical and online library tours, nursing and medical library database search demonstrations, and point-of-need (course-integrated) library sessions. The third component of the information literacy program was the Nursing Information Gateway, a Web page on the library's Web site that offers library modules tailored for each nursing course and consists of relevant faculty/librarian targeted nursing print and online resources, research guides, citation style guides, and library services.

In 2004, nursing faculty started using WebCT/CE as an on-ground course enhancement. The librarian had the opportunity to introduce a Library Resources component as part of the nursing WebCT course menu, which offered students a link to the Nursing Information Gateway. Students who need to access the Library Resources component click on the link in order to view the Nursing Information Gateway (see Figure 1) and select their course library module (see Figure 2). The embedded librarian was offered the status of teacher assistant and was allowed to participate and guide the discussion forums related to the use of the Nursing Information Gateway resources for library research, class assignments, and projects. The librarian was also individually assisting students through the internal e-mail tool. Managing and guiding the discussion forums gave the librarian the opportunity to enforce the knowledge and skills taught during the face-to-face library activities sessions in order to evaluate students' information literacy skills and to offer quick intervention and feedback. Observing students' behavior in regard to searching tools and strategies, quality of sources, and evaluating information sources empowered the librarian to adjust and more effectively tailor the content of the face-to-face library instruction sessions in order to address students' specific information needs.

WebCT/Vista: Online Library Course

At the end of 2004, WebCT/Vista 3.0 was implemented for the twelve Connecticut Community Colleges (CCC). A much improved course management system, WebCT/Vista added new teaching, learning, and administrative capabilities and also improved student learning outcomes assessment. The librarian was given the opportunity to be a member of the WebCT/Vista Implementation Team and of the Teaching and Learning Workstream. As the only librarian in the team, the librarian's main task

FIGURE 1. Nursing information gateway web page.

**Nursing 108**Information literacy activitiesInformation competencies**Nursing 115**Information literacy activitiesInformation competencies**Nursing 116**Information literacy activitiesInformation competencies**Nursing 226**Information literacy activitiesInformation competencies**Nursing 227**Information literacy activitiesInformation competencies**Nursing 228**Information literacy activitiesInformation competencies


was to research and demonstrate the possibilities and opportunities that WebCT/Vista offered for library usage, at a time when the demand for library presence in courseware was high. The librarian's research questions were:

- How can WebCT/Vista be used by libraries, librarians, and students for effective teaching and learning of library resources and research?
- What design and delivery tools could be used by librarians to ensure effective and efficient information literacy instruction?
- What learning tools could students use for effective learning of library resources and information literacy skills?
- How does WebCT/Vista support the Seven Principles for Good Practice in undergraduate education?

Based on fifty years of research on good teaching and learning in American colleges and universities, Chickering and Gamson (1987) demonstrate that good practice in undergraduate education encourages contact between students and faculty, develops reciprocity and cooperation among students, encourages active learning, gives prompt feedback, emphasizes time on task, communicates high expectations, and respects diverse talents and ways of learning. According to Chickering and Gamson (1987), "Together

FIGURE 2. Nursing 226 library module.

TRCC Home > LRC Home > Course-Related Guides > Nursing > Nursing 226



NURSING 226

Information Resources

<p><u>Library of Congress Class R- Medicine</u></p> <p><u>Reference Materials</u></p> <p><u>Books and Videos</u></p> <p><u>Magazines and Journals</u></p> <p><u>Associations and Organizations</u></p> <p><u>Online Catalog</u></p> <p><u>Online Databases</u> (articles)</p> <p><u>General Web Resources</u></p> <p><u>Subject-specific Web Resources</u></p> <p><u>Other Resources</u></p>	<p><u>Additional Research Tools</u></p> <p><u>CINAHL Database Search Guide</u></p> <p><u>PsycInfo Database Search Guide</u></p> <p><u>APA Citation Style Guide</u></p> <p><u>Services</u></p> <p><u>Ask a Librarian</u> (assistance from a virtual librarian)</p> <p><u>Ask Your Librarian</u></p>
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they employ six powerful forces in education: activity, expectations, cooperation, interaction, diversity, and responsibility” (para. 6).

The librarian first experimented with the creation of an online course in WebCT/Vista for the First Year Experience (FYE) students. At that point in time, TRCC had a FYE information literacy program in place. The program was the result of close collaboration between FYE faculty and the librarian. The program had three components, which were information literacy competencies, library activities, and library assignments. FYE faculty considered it necessary for their students to efficiently use the sections of the physical library and the Library of Congress Classification System. They also required students to use the library online catalog and general databases, such as Expanded Academic ASAP and LexisNexis Academic Universe, as search tools for class assignments and projects. Evaluating information sources and using quality library resources were emphasized. Other topics covered were plagiarism and how to avoid it and documenting outside sources by using proper citation styles. The program was offered in two sessions. In order to evaluate students’ information literacy skills, two assignments were given after the physical library tour and after the library online tour and database search demonstrations. The

assignments were corrected by the librarian and some of the faculty gave extra credit to their students for completion of the library assignments.

ACRL recommends that "the library services offered to the distance learning communities should be designed to meet effectively a wide range of informational, bibliographic, and user needs" (ACRL, 2004, para. 9). One of the services emphasized is "a program of library user instruction designed to instill independent and effective information literacy skills while specifically meeting the learner-support needs of the distance learning community" (2004). In order to design the FYE online library course, the librarian used WebCT/Vista tools such as the calendar, syllabus, assignments, discussion forums, chat/whiteboard, and media library. The description of the course contents is available in Figure 3. The discussion forums listed five topics to be discussed by the entire group. They were library's Web site resources, searching the online catalog, searching

FIGURE 3. WebCT/Vista FYE online library course contents.

Syllabus	FYE Library Module Resources	FYE Assignments and Final Project	Discussion Topics	Search Tips	Media Library
<ul style="list-style-type: none"> Physical library collection and Library of Congress Classification System Online catalog Library services Expanded Academic ASAP database LexisNexis Academic Universe database Evaluating information APA citation style format MLA citation style format 	<ul style="list-style-type: none"> How to Take Notes Guide How to Paraphrase Guide What is Plagiarism and How to Avoid It Guide Periodicals: Popular vs. Scholarly Expanded Academic ASAP Database Search Guide LexisNexis Academic Universe Database Search Guide APA Citation Style Guide MLA Citation Style Guide Glossary of Library Terms 	<ul style="list-style-type: none"> Library Assignment 1: Physical library collection Library Assignment 2: Online library collection Final Project: Annotated bibliography for a research project of interest 	<ul style="list-style-type: none"> Library's website resources Efficiently searching the Online catalog Efficiently searching Expanded Academic ASAP database Efficiently searching LexisNexis Academic Universe database Criteria for evaluating sources of information 	<ul style="list-style-type: none"> FYE Search Tips Blog 	<ul style="list-style-type: none"> FYE Image Gallery Student feedback and suggestions

Expanded Academic ASAP database, searching LexisNexis Academic Universe database, and evaluating information sources criteria. By using the enhanced discussions features in WebCT/Vista, the librarian could add instructions to each topic and easily guide and manage the discussions, which supported active learning, student/student and student/librarian interaction. The librarian could also limit discussions to specific time periods, emphasizing the time-on-task principle. A learner tool that enhances collaboration and peer learning is the media library. As WebCT/Vista supports sharing content across course and institution boundaries, the media library collection allowed multiple FYE groups to share images of their activities and collaboration and also share their feedback.

The chat/whiteboard tool has a new interface in WebCT/Vista, "which makes it easier and more intuitive to accompany real-time chat sessions with simultaneous whiteboard or slide-show presentations" (CCC, 2004, p. 3). The real-time text-based communication and the use of the whiteboard are efficient instructional tools and can transform the chat room into an information literacy learning laboratory. The librarian can post virtual office hours on the course's calendar. During the virtual office hours, the chat room allows the librarian to work synchronously with small groups of students or with individuals, which supports student/librarian and also direct instruction and differentiated library instruction.

Merrill (2003) defines direct instruction as "a subset of instructional situations in which there is some instructor or instructional agent that is not only providing information but also monitoring the instructional activities of the student and providing guidance and feedback as appropriate" (p. 1160). Closely related and founded on direct instruction, differentiated instruction is defined as "changing the pace, level, or kind of instruction you provide in response to individual learners' needs, styles, or interests" (Heacox, 2002, p. 5). The teacher can differentiate the teaching content, the process of teaching, the product, and the results of learning. When applying differentiated instruction, the teacher becomes a facilitator who provides and prescribes differentiated learning opportunities, organizes students for learning, and uses time flexibly. In a supportive differentiated classroom, differences are accepted, personal responsibility for learning is promoted, it is acknowledged that students learn at different rates, building feelings of personal competence and confidence in learning is supported, the creative spirit is nurtured, and everyone's work is honored (Heacox, 2002, pp. 11-13).

Since the whiteboard in WebCT/Vista supports image uploading and annotation, PowerPoint and Web page slide shows, the librarian can

create a virtual library of instructional tools such as individual images or slide shows on the use of Boolean operators, examples of concept maps, screenshots with examples of online catalog and database search methods, or APA and MLA citation style examples. These tools can be used for demonstrations during the chat sessions, efficiently allowing the librarian to serve students with different levels of information literacy skills and competencies. TRCC's student population included a large percentage of non-traditional students who had not been in school for a number of years and needed to be reoriented to academia. An image about using the logical operator could be used with a student who was unfamiliar with the use of Boolean operators. A much more advanced student interested in learning how to use the advanced search in the Expanded Academic ASAP database could be shown a screenshot illustrating a complex string search that searched multiple search fields and used different Boolean operators at one time. The system creates archive logs for all chat rooms, and the whiteboard software in WebCT/Vista also creates archive logs and can archive snapshots of whiteboard sessions for future viewing and printing, which further supports differentiated library instruction. As TRCC was revising and reorganizing its FYE program, the FYE online library course was not implemented.

WebCT/Vista: Library Learning Modules

The learning modules in WebCT/Vista enhance the student learning experience. Online students can save the contents of a learning module, "facilitating offline studying and archival of important class material" (CCC, 2004, p. 1). Students can also print the content of the learning module for offline review. Using the WebCT/Vista learning module tool for library instruction was an exciting and rewarding experience as it easily allowed the librarian to prove the value of library learning modules as indispensable components of fully-online, Web-enhanced, or hybrid courses. Lavery et al. (2003) describe the establishment of a learning technology team at Queen's University, and they offer examples of instructional teams at Indiana University-Purdue, University of Southern California, and Arizona State University. The authors emphasize the importance of multidisciplinary teams working together and how "bringing people together with varying perspectives and competencies has the potential to create a dynamic working environment" (p. 21). As the result of close collaboration between a FYE faculty member, the Director of Distance Learning, and the librarian, a FYE library learning module was

created. It became part of the FYE online course offered at that time at TRCC.

The three members of our multidisciplinary team started by planning the content of the library learning module based on the student learning outcomes established by the faculty member. Through an exchange of e-mail messages, the librarian and the faculty member created the library module content. The Director of Distance Learning was consulted along the way in regard to the creation and uploading of different material formats.

In comparison with the FYE library online course discussed above, the FYE library learning module offered a few improvements. Instead of having to select specific databases from a list, the students had direct access to the Expanded Academic ASAP and LexisNexis Academic Universe databases through the proxy server, which helped them be more efficient and save time. The library learning module also included an "Ask a Librarian" link, which offered students access to the services of their librarian or of a virtual librarian through InfoAnytime, a 24/7 service, for the time when the library was closed (see Figure 4).

The embedded librarian was given the status of teacher assistant. The librarian managed and directed the usage of the resources in the library module and the discussion forums, provided direct and differentiated instruction through the chat room/whiteboard tool, and used the FYE blog and the internal e-mail tool for information literacy instruction.

The internal e-mail tool in WebCT/Vista proved to be instrumental for providing direct and differentiated library instruction. Chickering and Ehrmann (1996) stated that the "biggest success story in this realm has been that of time-delayed (asynchronous) communication. With the new media, participation and contribution from diverse students become more equitable and widespread" (p. 3). The use of e-mail asynchronous communication in WebCT/Vista can effectively address the diverse needs of students with diverse learning styles or of students who have work and family responsibilities and can not attend the chat sessions.

Blogs could also be used as efficient tools for information literacy instruction in WebCT/Vista. A subject-specific blog inside the library learning module can support specific course content or assignment needs. The FYE library learning module blog shows a bite-session illustrating one of the online catalog search methods, a required skill for the FYE library assignment 1 (see Figure 5).

The discussion forum was taken to a different level in the FYE library learning module. The discussion forums in WebCT/Vista proved to be a powerful tool for students to develop critical thinking skills, which are

FIGURE 4. WebCT/Vista FYE library learning module.

Table of Contents for

FYE Library Learning Module1. *FYE Information Literacy Program*

1.1. First Year Experience Information Competencies

1.2. First Year Experience Library Activities

2. *FYE Library Resources*

2.1. How to Take Notes

2.2. How to Paraphrase

2.3. What is Plagiarism and How to Avoid It

2.4. Periodicals: Scholarly versus Popular

2.5. Academic Search Premier Database

2.6. LexisNexis Academic Universe Database

2.7. FYE Search Tips

2.8. Citing in APA Format

2.9. Citing in MLA Format

3. *Other Library Resources*

3.1. Library Website

3.2. Online Catalog

3.3. All Library Databases

3.4. Request a Library Card

3.5. Request Interlibrary Loan Materials

4. *Ask a Librarian*

4.1. Ask Your Librarian

4.2. Ask a Virtual Librarian 24/7

indispensable for them as astute consumers of information in this age of information overload. The discussion tool also proved to efficiently support cooperative learning and learning communities. Chaffee (2004) states that critical thinking is the cornerstone of higher education, the hallmark of an educated person (p. XI). A critical thinker is thinking actively, carefully exploring situations, thinking independently, viewing situations from different perspectives, and discussing ideas in an organized way (Chaffee, p. 71). Johnson, Johnson and Smith (1991) define cooperative learning as:

The instructional use of small groups so that students work together to maximize their own and each other's learning. Considerable research

FIGURE 5. FYE search tips blog entry.

TUESDAY, JANUARY 10, 2006

Searching the Online Catalog: The Simple or Combined Search

The Simple or Combined Search in the Online Catalog allows you to specify your search terms, select a type of search such as Keyword, Title, Author, etc., and indicate a limit for your search.

This is how the Simple Search works:

1. Select the type of search from the drop-down menu in the "Find results in" box. Read the instructions for the type of search you selected.

2. Type the search terms in the "Find it" box.

For example, you are looking for information on the impact of divorce on children. If you do a Keyword Search, you type "divorce +children."

If you do a Command Search, you type "divorce AND children."

At this point in your search you can select a limit by clicking on the "Simple Limit" or on the "Limits" button. You can also select the number of records per page.

3. Click on the "Search" button to start your search.

On the results page the items are arranged in decreasing relevance order, the most relevant items being located at the top of the results list.

demonstrates that cooperative learning produces higher achievement, more positive relationships among students, and healthier psychological adjustment than do competitive or individualistic experiences. (para. 2)

In order to participate in cooperative learning and in order to be members of learning communities, students are required to be "open-minded, knowledgeable, mentally active, curious, independent thinkers, skilled discussants, insightful, self-aware, creative, and passionate" (Chaffee, p. 39-40). Students also need to construct arguments and evaluate the value of others' arguments. The study of the dynamics of students' behavior in

the discussion forums helped the librarian to realize that the discussion tool in WebCT/Vista could be taken to a superior level, and it could be used to educate students to become creative thinkers and knowledge builders.

Based on the idea that in this age "the health and wealth of societies depend increasingly on their capacity to innovate," Scardamalia and Bereiter (2003) defined knowledge building as "the production and continual improvement of ideas of value to a community, through means that increase the likelihood that what the community accomplishes will be greater than the sum of individual contributions and part of a broader cultural effort" (p. 1370). Scardamalia and Bereiter further showed the distinction between learning and knowledge building:

Learning is an internal, unobservable process that results in changes of belief, attitude, or skill. Knowledge building, by contrast, results in the creation or modification of public knowledge—knowledge that lives 'in the world' and is available to be worked on and used by other people. (p. 1371)

Knowledge building is centered on the collective cognitive responsibility, which implies that all group members are responsible for their contribution to the success of the group effort (Scardamalia, 2002).

For example, the FYE students were organized in four learning communities researching four topics related to searching the Expanded Academic ASAP database: subject search, relevance search, keyword search, and advanced search. The four groups were asked to conduct searches and discuss and provide conclusions under their learning community topic about the most effective use of the assigned search method. Each student in the learning community was supposed to conduct at least three searches, discuss the findings on the discussion board, and participate in the creation of the group conclusions. After the group conclusions were listed, the class was required to discuss and provide conclusions for the fifth topic on the discussion board, "What is the most effective way of searching the Expanded Academic ASAP database?"

The librarian offered assistance by guiding, directing, and offering prompt feedback. The entire group concluded that depending on the information available and on the search goals, the subject search worked best when one had a broad research topic and needed to narrow it down; the relevance search mode worked best when one had a defined topic and was looking for the most relevant articles; the keyword search retrieved the most current articles first and was best used when searching for current

information on a topic; the advanced search in Expanded Academic ASAP was found to be efficient and powerful when one knew the title of the article, the author, the publication date, or the publication title.

The librarian, the faculty, and the Director of Distance Learning also created WebCT/Vista library learning modules for the nursing, early childhood education, ethics, and psychology online, hybrid, and Web-enhanced courses. Figure 6 illustrates the contents of the psychology library learning module.

FIGURE 6. WebCT/Vista Psychology library learning module.

Table of Contents for

Psychology Library Learning Module

1. *Search for Books, Videos, DVD's, CD's*

1.1. Online Catalog

1.2. iConn/reQuest Database

2. *Psychology Research Guides*

2.1. General Psychology I Research Guide

2.2. Mental Disorders Research Guide

3. *Search for Articles*

3.1. PsycInfo Database

3.2. Psychology & Behavioral Sciences Database

3.3. CINAHL Database

3.4. Clinical Pharmacology Database

3.5. JAMA (The Journal of the American Library Association)

3.6. Expanded Academic ASAP Database

3.7. Academic Search Premier Database

3.8. All Library Databases

4. *Psychology/Medical Databases Search Guides*

4.1. PsycInfo Database Search Guide

4.2. CINAHL Database Search Guide

4.3. Psychology Search Tips

5. *Online Library Forms*

5.1. Request a Library Card

5.2. Request Interlibrary Loan Materials

6. *Citing*

6.1. APA Citation Style Guide

7. *Ask a Librarian*

7.1. Ask Your Librarian

7.2. Ask a Virtual Librarian 24/7

Similar to the Macro-Level Library Courseware Involvement method described by Shank and Dewald (2003), the librarian and the Distance Learning Director also collaborated and created a core library learning module. The core library learning module contained direct access to the online catalog, the main general databases, the database search guides, the APA and MLA citation style guides, and the library card and interlibrary loan online forms. It also offered access to the services of the librarian and a virtual librarian, through InfoAnytime, 24/7 service. The module was placed by the courseware administrator in a shared space. Faculty could access, upload, and place the core library learning module in their course menu.

USING EPORTFOLIOS FOR INFORMATION LITERACY INSTRUCTION

Another enlightening and rewarding experience for the librarian was the addition of a library research component to the ePortfolios for Nursing 108 students. The ePortfolios software used was created by the Connecticut Distance Learning Consortium (CTDLC). Because they support students in exercising reflective learning, ePortfolios were enthusiastically received in the academic environment and considered "models of technological innovation" (Goldsmith, 2006, p. 1). Lorenzo and Ittelson (2005) state that e-Portfolios:

... allow students to demonstrate competencies and reflect upon the experiences, documenting academic preparation and career readiness. Creating ePortfolios enables students to enhance their learning by giving them a better understanding of their skills, as well as where and how they need to improve to meet academic and career goals. (abstract)

The authors assessed ePortfolios case studies from a few American colleges and universities. CTDLC's ePortfolios platform, which was included in the assessment, is described as being student-centered, customizable, and reflective.

TRCC's Nursing 108 program introduces students to the nursing curriculum, nursing roles, and skills required in the profession of nursing. The ePortfolios system used by the Nursing 108 students allowed them to create portfolios for academic and career use, helping them to maintain

their plan of study and to share their work with faculty, career counselors, and the librarian. Starting in 2004, the librarian offered a 2.5-hour library face-to-face class to Nursing 108 students. The class was divided into two sessions, a lecture about the physical library and a tour and an online nursing and medical databases search demonstration session. The first session included information about the Library of Congress Classification System Class R and instruction on distinguishing between scholarly, popular, and trade publications. The second session offered instruction about plagiarism and documenting outside sources in APA format. Students also learned to access and use the resources on the Nursing Information Gateway and the Nursing 108 library learning module, both available in their WebCT/Vista Web-enhanced course.

The librarian was invited to create a library component for the ePortfolios used by the students. The library research project required Nursing 108 students to find information on the TRCC's research themes, such as "health and metamorphosis", "nursing and water issues", or "health and connections." The faculty member and the librarian designed a library ePortfolio, one of the ePortfolios that Nursing 108 students were required to create and provide for evaluation.

For the completion of the library ePortfolio, students were asked to search for a scholarly article on the research topic they were studying. The library ePortfolio consisted of a copy of a scholarly article and a word document describing the library databases the student used to search for the article and the search methods and techniques that he or she employed. The word document also included the student's reflection on the content of the article. When the library ePortfolio was completed, the student sent a guest invitation to the librarian who could access it and read the article and the reflection document. The librarian provided a written evaluation to both the student and the faculty member. Two examples of the librarian's evaluation follow.

I am glad that you accessed the nursing/medical databases through the Nursing Information Gateway. Your instructors and I created this resource to make your research easier and efficient.

You found a scholarly article, as your instructor requested, and you applied very good search techniques by using Boolean (logical) operators, the nesting technique, and by limiting by date range.

I am glad that you used Medline to search for your article because this is a new database in our collection. Using synonyms for the

word "metamorphosis," such as "change," or "transformation," or "transfiguration," would have retrieved more articles on your topic.

Nursing 108 ePortfolios gave the librarian unique opportunities to evaluate the quality of the information found by students and the efficiency of search strategies and methods taught in the face-to-face library session, and it allowed librarians to assess the level of information literacy skills. The amount of work was considerable, but, as Dick, Carey, and Carey (2005) demonstrated in their study about the systematic design of instruction model, "instruction is designed not for one delivery, but for use on as many occasions as possible with as many learners as possible. Because it is reusable, it is worth the time and effort to evaluate and revise it" (p. 9).

This project also strengthened the librarian/faculty and student/librarian collaboration and provided direct and differentiated library instruction to students. The assessment and evaluation allowed the librarian to adjust and improve the content and teaching methods of the face-to-face library instruction classes.

USING WIKIS FOR INFORMATION LITERACY INSTRUCTION

Bejune (2007) analyzes the phenomenon of Wikis in libraries and demonstrates how Wikis have been adopted to support a variety of collaborative activities within the libraries. The author considered Wikis within the frame of computer-supported cooperative work (CSCW), identified thirty-three library Wikis, and developed a classification with four categories: collaboration among libraries; collaboration among library staff; collaboration among library staff and patrons; and collaboration among patrons (p. 26).

This section of the paper describes a Wiki used at the University of Rhode Island for an education course as a collaboration tool between the librarian, the faculty member, and the students. The library component of the Wiki is designed to help students efficiently complete the research work for one of the course's research projects. The faculty member, a strong supporter of instructional opportunities offered by Web 2.0 software, selected Wikispaces Web site to enhance his EDC 102 course. Wikispaces, an Internet service that offers public, protected, and private space, is available at <http://www.Wikispaces.com>. Among other features,

Wikispaces allows for new page creation, for the use of visual and text editors, for linking pages, and for the inclusion of images, files, blogs, and RSS feeds. The librarian was invited to create a library component on the Wikispaces Webpage in order to support students' research for the Current Issues in American Public Education Project.

During face-to-face meetings, the faculty member and the librarian established the library research learning outcomes for the final project. Students were required to create a group mind/concept map for their research topic. Each member of the group was required to find two editorials or essays, one scholarly article from a journal, one analysis article from a magazine or reputable newspaper, and one ERIC Digest. The librarian created a search tips document and used SnagIt to design short guides for searching Opposing Viewpoints, Academic Search Premier, and ERIC databases. These research tools were placed on the EDC 102 Wikispaces page, under Library Resources for the project (see Figure 7). The librarian offered EDC 102 students two face-to-face library sessions. In the first session, students were taught to create a mind/concept map on the No Child Left Behind Program. Students then organized into six groups, selected a topic of interest related to current American public education issues, and created a group mind/concept map. The topics selected were school funding, extracurricular activities, school safety, sex education, dress code, and diversity. Also during the first library session, students were taught to search the Opposing Viewpoints and Academic Search Premier databases to find viewpoints, essays, and journal and magazine articles on their research topics. Students were also introduced to the ERIC database, and they learned to search for ERIC Digests on their research topic. The

FIGURE 7. Wikispaces library resources component

B. Resources for Doing Good Research

To prepare our presentations, we each did background research on a specific research question related to our issue. To do this well, we had help from Mona Florea from the URI Curriculum library. Each person in each group is responsible for completing background research. There is a rubric for how this research should be represented on URITK.

Using URI Library Resources to Research Educational Issues

1. [General Search Tips](#)
2. [Opposing Viewpoints Database](#)
3. [Academic Search Premier Database](#)
4. [Using the ERIC Database to locate ERIC Digests](#)

librarian demonstrated the use of the Library Resources component on the Wikispaces page. The second library session was a hands-on session. Students worked on their research and the librarian and faculty member offered individual assistance.

Each group of students uploaded the mind/concept map created during the first library session on their Wikispaces page, and every member of the group contributed summary research ideas and the five required articles. Their group research culminated with a PowerPoint presentation made in front of the class.

The librarian and the faculty member evaluated students' research results and analyzed the data. Future meetings will allow assessment of student learning outcomes, restructuring and adjusting of face-to-face library instruction, and redesigning of the Library Resources component on the Wikispaces page.

Wikispaces tools such as discussion rooms, blogs, or file sharing spaces support active learning, student/student collaboration, and student/faculty/librarian interaction. Future EDC 102 groups will have access to the work of the current group, and they will have the chance to use this knowledge as a foundation for discovering new sources of information, for adding innovative ideas, and creating new knowledge.

CONCLUSION

The results of the librarian's research work proved that the use of WebCT course management, ePortfolios, and Wikis was beneficial for online information literacy instruction. They demonstrated the necessity of library presence in the online learning environment and also strengthened the position of librarians as partners, team members, and collaborators in the education/instruction process.

Besides supporting the Seven Principles for Good Practice in Undergraduate Education, allowing the application of efficient learning theories such as direct instruction, differentiated instruction, and knowledge building, online course management systems, ePortfolios, and Wikis encourage collective cognitive responsibility, a necessity in today's information age. The future improvement of course management tools such as discussion forums, file sharing spaces, and the chat/whiteboard tool will offer even more complex possibilities for information literacy instruction and

student/student and student/faculty/librarian interaction and collaboration. The research on the use of tutorials, RSS feeds, Webcasts, and podcasts with courseware and Wikis is at the beginning stages and can open a myriad of opportunities for providing library instruction and other library services in the online environment.

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